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HSM-13003
(No. assigned after issuance of memo)

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(original signed by H. Fong)

DATE: July 2, 2013

SUBJECT: RESULTS FROM CONSULTATION WITH STANISLAUS CAC CONCERNING PROPOSED CONSTRUCTION OF FUMIGATION CHAMBER

On May 28th, 2013, Associate Industrial Hygienist Parissa Tehrani and I traveled to Stanislaus County to provide consultation for Stanislaus County Agricultural Commissioner's (CAC) staff concerning the proposed construction of a multi-chamber fumigation facility in the county. Kelley Schroeder of the Stanislaus CAC was present at the facility site of the Fisher Nut Company, located west of the city of Modesto. The company president, Ron Fisher, was present, as well as other company staff.

The proposed fumigation chambers are to be located within the confines of an existing steel enclosed structure. The existing structure's walls and ceiling would be modified to become chamber walls and ceiling. An interior wall would be added along the inside of the existing structure, spanning the width of the structure and constituting the rear of the proposed fumigation chambers. This new wall would be a shared wall with an adjoining storage area within the present building envelope. Two additional walls would be constructed within the fumigation chamber area to divide the area into three distinct fumigation chambers. Necessary openings would be added to the exterior walls to allow access to the chambers from the outside. Photo One shows the existing exterior wall. Two more openings would be added to this wall. The present smaller entrance door would be eliminated. No openings/penetrations are presently proposed for the new interior wall.

This proposed structural modification would conflict with 1994 Reference Manual: Methyl Bromide Commodity Fumigation; ***Condition 4: Common Wall***. The location of other roll-up doors in the structure appear too distant from the proposed common wall to provide sufficient flow-through of air to dilute/remove any fugitive emissions from the chambers. Likewise, bin stacks in the structure would likely inhibit any passive air –flow ventilation (see Photo Two). So this structure should be considered an enclosed area.

Photo One: Existing exterior

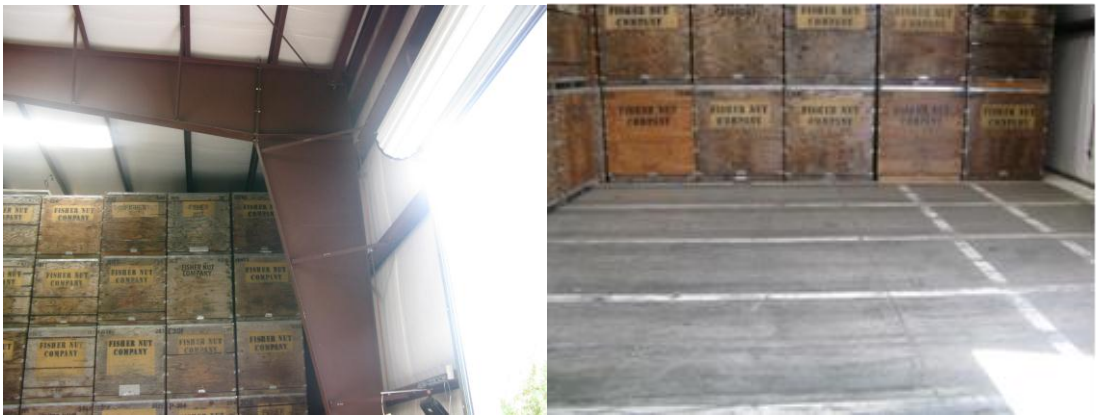

Photo Two: Bin stacks interfere with passive ventilation

According to the 1994 Reference Manual, potential alternatives to this non-compliance include:

1. Application scheduled when no workers present (test before allowing entry)
2. Pressure-tested chamber
3. Limited access (5 ppm maximum/1 hour time limit; requires testing)
4. Mechanical ventilation with periodic testing

Mr. Fisher indicated that large, structurally integrated fans, as shown in Photo Three, could be installed to exhaust any fugitive emissions that might escape from the chamber into the storage area. I recommend that a fresh-air supply fan be installed on the east wall of the structure, at approximately 2 to 3 meters from the floor. Directly across, on the west wall, a companion exhaust fan should also be installed. This would result in constant push-pull ventilation along the area where emissions from the common chamber wall would be most problematic.

In my professional judgment, if the chambers are pressure tested and an air mover system, as previously described, were installed, that would be sufficient to ensure compliance with ***Condition 4: Common wall***. Periodic testing (initially for the first 5 fumigations, then every 5th fumigation) of the enclosed area should also be conducted to ensure negligible leakage and adequate ventilation. Bins should not be stacked along the air-flow corridor between the supply and exhaust fans.

The recommended mechanical ventilation must be active during both fumigation and aeration phases and can be switched off otherwise.

All buffer zone requirements must be met when operating the fumigation chamber. The appropriate aeration buffer zone must be computed for the aeration stack installed. Marking the minimum perimeter buffer zones around the structure with permanent methods (painted lines, fencing, etc.) is advised.

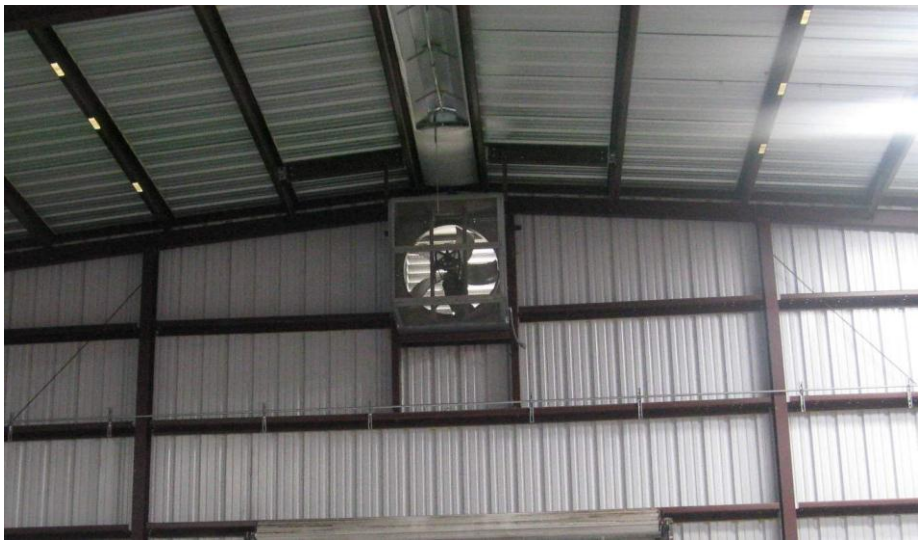

Photo Three: Example of fan for installation to control emission buildup

I strongly advise that bollards be installed around the fumigations structure (including the shared wall of the addition presently under construction), at the 10 foot minimum buffer zone perimeter, to prevent damage to the chamber walls.

All appropriate structural and procedural requirements as specified in the 1994 Reference Manual: Methyl Bromide Commodity Fumigation should be followed.

cc: Kelley Schroeder. Agricultural Inspector, Stanislaus County Department of Agriculture
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Pamela Wofford, Senior Environmental Scientist, Environmental Monitoring Branch